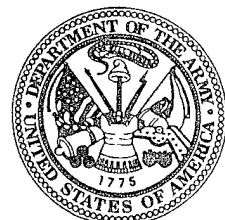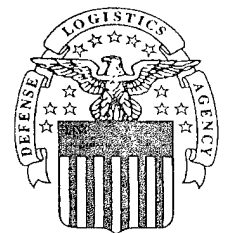# Technical Publication Transfer

Using:

Gateway Conversion Technology's Data

MIL-M-28001A (SGML)
MIL-R-28002A (Raster)

Quick Short Test Report

06 July 1993

Prepared for

Electronic Systems Center

1996 0822 148

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Quick Short Test Report

06 July 1993

Prepared By
Air Force CALS Test Bed
Wright-Patterson AFB, OH 45433

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Contents

1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, is to analyze Gateway Conversion's interpretation and use of the CALS standards in transferring technical publication data. Gateway Conversion used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 93-065

Date of
Evaluation: 06 July 1993

Evaluator: George Elwood
                              Air Force CALS Test Bed
                              DET 2 ESC/AV-2P
                              4027 Colonel Glenn Hwy
                              Suite 300
                              Dayton OH 45431-1672

Data
Originator: Suzy Wharam
                              Gateway Conversion Technology
                              4709 Creekstone Drive
                              Suite 300
                              Morrisville NC 27560
                              (919) 319-6500

Data
Description: Technical Manual Test
                                    1 Document Declaration file
                                    1 Document Type Definition (DTD)
                                    1 Text/Standard Generalized Markup Language
                                            (SGML) file
                                    10 Raster files

Data
Source System:
                  1840
                              HARDWARE
                                    Unknown
                              SOFTWARE
                                    Unknown

            Text/SGML
                              HARDWARE
                                    Unknown
                              SOFTWARE

                                    SoftQuad

Raster
>   **HARDWARE**
>   >   Unknown
>   **SOFTWARE**
>   >   Unknown

Evaluation Tools Used:

>   **MIL-STD-1840A (TAPE)**
>   >   SUN 3/280
>   >   >   AFCTN *Tapetool v1.2.9 UNIX*
>   >   >   XSoft *CAPS/CALS v40.4*
>   >   >   Texas Instruments (TI) *Tapetool v1.0.1*
>   >   PC 486/50
>   >   >   AFCTN *Tapetool v1.2.9 DOS*

>   **MIL-M-28001 (SGML)**
>   >   PC 486/50
>   >   >   Exoterica *XGMLNormalizer v1.2e3.2*
>   >   >   Exoterica *Validator v2.0 exl*
>   >   >   McAfee & McAdam *Sema Mark-it v2.3*
>   >   >   Public Domain *sgmls*

>   **MIL-R-28002 (Raster)**
>   >   SUN SparcStation 2
>   >   >   Carberry *CADLeaf Plus v3.1*
>   >   >   AFCTN *validg4*
>   >   >   AFCTN *calstb.475*
>   >   >   IGES Data Analysis (IDA) *IGESView v3.0*
>   >   PC 486/50
>   >   >   AFCTN *validg4*
>   >   >   IDA *IGESView Windows*
>   >   >   Inset Systems *HiJaak v2.1*
>   >   >   Inset Systems *HiJaak Window v1.0*
>   >   >   Corel *Ventura Publisher*

**Standards
Tested:**

>   MIL-STD-1840A
>   MIL-M-28001A
>   MIL-R-28002A

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool v1.2.9* utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using the XSoft *CAPS read1840A* utility without any reported errors.

The tape was read using the TI *Tapetool v1.0.1*.

The physical tape structure meets the CALS MIL-STD-1840A requirements.

3.2.2   Declaration and Header Fields

No errors were found in the Document Declaration file and data file headers. This portion of the tape meets the CALS MIL-STD-1840A requirements.

4.   IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included on this tape.

5.   SGML Analysis

The AFCTB has several parsers available for evaluating sub-mitted DTD and Text files. These tools are not used to generate a pass/fail but to report how commercially avail-able software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or Text files re-quired by each system are not documented in the report.

The tape contained one text file and one DTD. All parsers available in the AFCTB reported errors. See Appendix B to this report for the error logs.

The first reported error, from some of the parsers, was a typographical error in the external identifiers. Shown below are the entities which had to be changed.

```
                                                Added here V
<!ENTITY % ISOgrk3 PUBLIC "ISO 8879-1986//ENTITIES Greek Symbols//EN"
                          "/app/sqps/dtds/entities/isogrk3.ent">
<!ENTITY % ISOlat1 PUBLIC "ISO 8879-1986//ENTITIES Laten 1/EN"
                             •Added Latin 1/• ^^^^^^^^
                          "/app/sqps/dtds/entities/isolat1.ent">
```

The Text file and DTD from the tape were evaluated using another parser available within the AFCTB. Because of the errors in the DTD, it would not compile and the Text file was not evaluated.

The Text file and DTD from this document were evaluated using Exoterica's *Validator exl*, Exoterica's *XGMLNormalizer*, McAfee & McAdam's *Sema Mark-it*, and Public Domain's *sgmls* parsers without a reported error.

The DTD and Text file do not meet the CALS MIL-M-28001A specification.

6. Raster Analysis

The tape contained ten (10) Raster files. All 10 files were evaluated using the AFCTN *validg4* utility. This program reported that all 10 files meet the CALS MIL-R-28002A specification.

The files were read into the AFCTN *calstb.475* viewing utility. No problems were noted.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The Raster files were read into Carberry's *CADLeaf* software without a reported error, and displayed.

The files were read into IDA's *IGESView* and *IGESView for Windows* without a reported error, and displayed.

The files were read into Inset Systems' *HiJaak for Windows* without a reported error, and displayed.

The files were converted using Inset Systems' *HiJaak for DOS* into an IMG format without a reported error. The resulting files were read into Corel's *Ventura Publisher*, displayed, and printed.

The Raster files were converted using Rosetta Technologies' *Prepare* without a reported error. The resulting files were read into Rosetta Technologies' *Preview* and displayed.

The Raster files meet the CALS MIL-R-28002A specification.

7. CGM Analysis

No Computer Graphics Metafile (CGM) files were included on this tape.

8. Conclusions and Recommendations

The tape submitted by Gateway Conversion Technology has no reported physical or CALS header errors. They meet the CALS MIL-STD-1840A requirements.

The Text file and DTD had multiple reported errors from all parsers available within the AFCTB. The SGML file does not meet the CALS MIL-M-28001A specification.

The Raster files meet the CALS MIL-R-28002A specification.

The tape does not meet the CALS MIL-STD-1840A requirements due to the errors reported in the SGML files.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

Air Force CALS Test Network Catalog Evaluation - Version 1.2; Release 9 (O)

    Standards referenced:
      MIL-STD-1840A (1987) - Automated Interchange of Technical Information
      ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
                          for Information Interchange
      ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Sat Jul 3 12:18:34 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/u129/Set018

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D001G001	DTD	D/00260	02048/000012	Extracted
D001R002	Raster	F/00128	02048/000012	Extracted
D001R003	Raster	F/00128	02048/000015	Extracted
D001R004	Raster	F/00128	02048/000007	Extracted
D001R005	Raster	F/00128	02048/000016	Extracted
D001R006	Raster	F/00128	02048/000013	Extracted
D001R007	Raster	F/00128	02048/000006	Extracted
D001R008	Raster	F/00128	02048/000007	Extracted
D001R009	Raster	F/00128	02048/000003	Extracted
D001R010	Raster	F/00128	02048/000013	Extracted
D001T011	Text	D/00260	02048/000063	Extracted

Catalog Process terminated normally.

9.2 Tape Evaluation Log

Air Force CALS Test Network Tape Evaluation - Version 1.2; Release 9 (O)
  Standards referenced:
    ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
                          for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Sat Jul 3 12:18:19 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CALS01   4

  Label Identifier: VOL1
  Volume Identifier: CALS01
  Volume Accessibility:
  Owner Identifier:
  Label Standard Version: 4

HDR1D001   CALS0100010001000000 93168 00000 000000

  Label Identifier: HDR1
  File Identifier: D001
  File Set Identifier: CALS01
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0000
  Generation Version Number: 00
  Creation Date: 93168
  Expiration Date: 00000
  File Accessibility:
  Block Count: 000000
  Implementation Identifier:

HDR2D0204800260   00

  Label Identifier: HDR2
  Recording Format: D
  Block Length: 02048
  Record Length: 00260
  Offset Length: 00

************ Tape Mark ***************

  Actual Block Size Found = 2048 Bytes.

  Number of data blocks read = 1.

************ Tape Mark ***************

EOF1D001   CALS0100010001000000 93168 00000 000001

  Label Identifier: EOF1
  File Identifier: D001
  File Set Identifier: CALS01
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0000
  Generation Version Number: 00
  Creation Date: 93168
  Expiration Date: 00000
  File Accessibility:
  Block Count: 000001
  Implementation Identifier:

EOF2D0204800260   00

  Label Identifier: EOF2
  Recording Format: D
  Block Length: 02048
  Record Length: 00260
  Offset Length: 00

************ Tape Mark ***************

               <<<<< *PART OF LOG FILE REMOVED HERE* >>>>>

************ Tape Mark ***************

########### End of Volume CALS01 #############

########### End Of Tape File Set #############

Deallocating /dev/rmt0...

Tape Import Process terminated normally.

9.3   Tape File Set Validation Log

Air Force CALS Test Network File Set Evaluation - Version 1.2; Release 9 (O)

```
  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information
```

Sat Jul 3 12:18:34 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set018

Found file: D001
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

```
srcsys: Gateway Conversion Technologies, Inc.
srcdocid: TO16C1-27-28-2
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19930617
dstsys: Northrop Corp.
dstdocid: TO16C1-27-28-2
dstrelid: NONE
dtetrn: 19930617
dlvacc: Northrop Corp.
filcnt: G1,R9,T1
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: Technical Manual
docttl: CONTROL STICK, PILOT'S GRIP 9021270400-1
```

Found file: D001G001
Extracting DTD Header Records...
Evaluating DTD Header Records...

```
srcdocid: TO16C1-27-28-2
dstdocid: TO16C1-27-28-2
notes: NONE
```

Saving DTD Header File: D001G001_HDR
Saving DTD Data File: D001G001_DTD

Found file: D001R002
Extracting Raster Header Records...

```
Evaluating Raster Header Records...

srcdocid: TO16C1-27-28-2
dstdocid: TO16C1-27-28-2
txtfilid: W
figid: fig1-1
srcgph: fig1-1
doccls: UNCLASSIFIED
rtype: 1
rorient: 000,270
rpelcnt: 001856,001712
rdensty: 0300
notes: NONE

Saving Raster Header File: D001R002_HDR
Saving Raster Data File: D001R002_GR4


             <<<<< PART OF LOG FILE REMOVED HERE >>>>>

Found file: D001T011
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: TO16C1-27-28-2
dstdocid: TO16C1-27-28-2
txtfilid: W
doccls: UNCLASSIFIED
notes: NONE

Saving Text Header File: D001T011_HDR
Saving Text Data File: D001T011_TXT

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.
```

10.   Appendix B - Detailed SGML Analysis

10.1   Parser Log

```
                SGML Document Type Definition Parser
                     An SGML System Conforming to
                  International Standard ISO 8879
                  Standard Generalized Markup Language


Log file: '9365.LOG'
SDO File: 'ctndecl.sdo'
Namecase General is yes.
Namecase Entity is no.
Parsing DTD file: '9365.dtd'
<!ENTITY bull DTD0143: Attempt to declare general entity name 'bull'
        more than once denied.
        In declaration: '<!ENTITY'.
        In declaration: '<!DOCTYPE'.
        in line 47 in file '\public\iso$pub.ent'
        in line 31 in file '9365.dtd'
   SDATA "[bull  ]"--/bullet B: =round bullet, filled-->
<!ENTITY lt DTD0143: Attempt to declare general entity name 'lt'
        more than once denied.
        In declaration: '<!ENTITY'.
        In declaration: '<!DOCTYPE'.
        in line 25 in file '\public\iso$num.ent'
        in line 34 in file '9365.dtd'
    SDATA "[lt    ]"--=less-than sign R:-->

<!ELEMENT note       - o  (para+|%list;)>
<!ATTLIST note            type      CDATA     #IMPLIED
                          XREFID    idref
DTD0137: Incorrect token 'idref'.
Parser Ignoring Input Up To Next MDO.
        In declaration: '<!ATTLIST'.
        In declaration: '<!DOCTYPE'.
        in entity 'list'
        in line 364 in file '9365.dtd'
    #implied
                          %att;>


DTD0096: The generic ID DOCNO has not been used in any content
        model, inclusion, or as a doctype element.
DTD0096: The generic ID EQPTTYPE has not been used in any content
        model, inclusion, or as a doctype element.
```

DTD0096: The generic ID HCI has not been used in any content
          model, inclusion, or as a doctype element.
DTD0096: The generic ID HRULE has not been used in any content
          model, inclusion, or as a doctype element.
DTD0096: The generic ID MODELNO has not been used in any content
          model, inclusion, or as a doctype element.
DTD0096: The generic ID PHASE has not been used in any content
          model, inclusion, or as a doctype element.
DTD0096: The generic ID SUPEQP has not been used in any content
          model, inclusion, or as a doctype element.
DTD0096: The generic ID SUPPLIES has not been used in any content
          model, inclusion, or as a doctype element.

DTD does not conform to ISO 8879 standard due to these errors:
    Uncorrectable syntax error count: 1
.DTO file not created due to parsing errors.

Program status code: 5.

10.2   Exoterica XGMLNormalizer Parser

10.2.1   DTD Parser Log

```
C:\XGML\XGMLNORM.EXE --
Error on line 10 in file entities/9365.dtd:
A formal public identifier is invalid.
For ENTITY declaration 'ISOgrk3': The formal identifier is 'ISO
8879-1986//ENTITIES Gr ...'.

C:\XGML\XGMLNORM.EXE --
Error on line 12 in file entities/9365.dtd:
A formal public identifier is invalid.
For ENTITY declaration 'ISOlat1': The formal identifier is 'ISO
8879-1986//ENTITIES La ...'.

C:\XGML\XGMLNORM.EXE --
Error on line 19 in file entities/9365.dtd:
Invalid file specification (external identifier).
For the entity 'ISOgrk3':
The system id is "".
The public id is "ISO 8879-1986//ENTITIES Gr ...".
```

10.3   Exoterica Validator exl

```
<!-- Entity has no name, system id or public id in formal file -->.
<!-- **Warning** in "iso-pub.ent" (entity "%ISOpub"), line 47 in "9365.sgm", line 97:
   A general entity name has been declared more than once.
   The entity is "bull".
   <!ENTITY bull   SDATA "[bull  ]"--/bullet B: =round bullet, filled-->
              ^^^^

-->
<!-- **Warning** in "iso-num.ent" (entity "%ISOnum"), line 26 in "9365.sgm", line 100:
   A general entity name has been declared more than once.
   The entity is "lt".
   <!ENTITY lt      SDATA "[lt     ]"--=less-than sign R:-->
            ^^

-->
<!-- **Warning**:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "ENTRY".
   (((#PCDATA|xref|change|emphasis|esd|hcp|ocp|
      ^^^^^^

-->
<!-- **Warning**:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "NOTICE".
   (((#PCDATA|xref|change|emphasis|esd|hcp|ocp|
      ^^^^^^

-->
<!-- Entity has no name, system id or public id in formal file -->.
<!-- **Warning** in "9365.sgm", line 657:
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "DOCNO".
-->
<!-- **Warning** in "9365.sgm", line 657:
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "EQPTTYPE".
-->
<!-- **Warning** in "9365.sgm", line 657:
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "HCI".
-->
<!-- **Warning** in "9365.sgm", line 657:
```

```
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "HRULE".
-->
<!-- **Warning** in "9365.sgm", line 657:
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "MODELNO".
-->
<!-- **Warning** in "9365.sgm", line 657:
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "PHASE".
-->
<!-- **Warning** in "9365.sgm", line 657:
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "QUANTITY".
-->
<!-- **Warning** in "9365.sgm", line 657:
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "SPECIFICATION".
-->
<!-- **Warning** in "9365.sgm", line 657:
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "SUPEQP".
-->
<!-- **Warning** in "9365.sgm", line 657:
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "SUPPLIES".
-->
<!-- 0 error and 14 warnings reported. -->
```
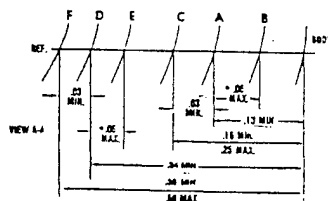
11. Appendix C - Detailed Raster Analysis

11.1 All Raster Files

11.1.1 Output HiJaak/Ventura Publisher

KEYWAY

(Solder Pot Side)
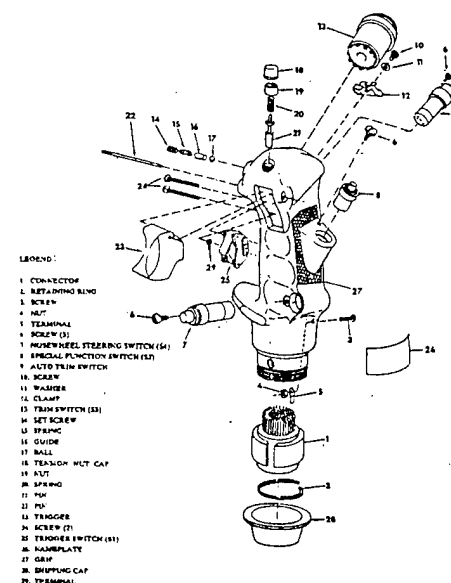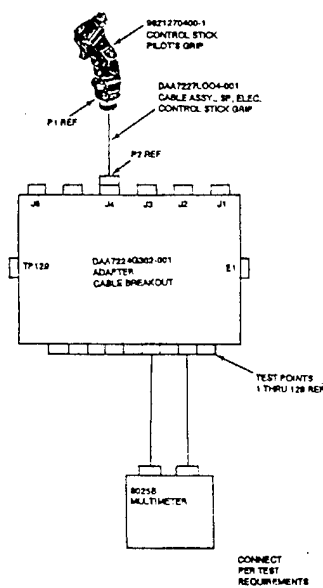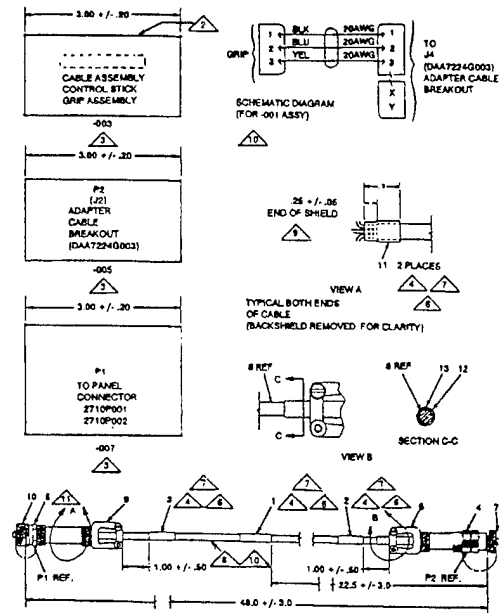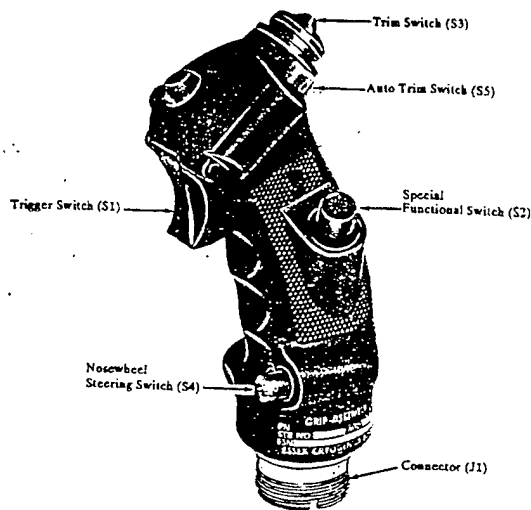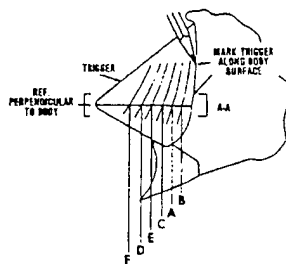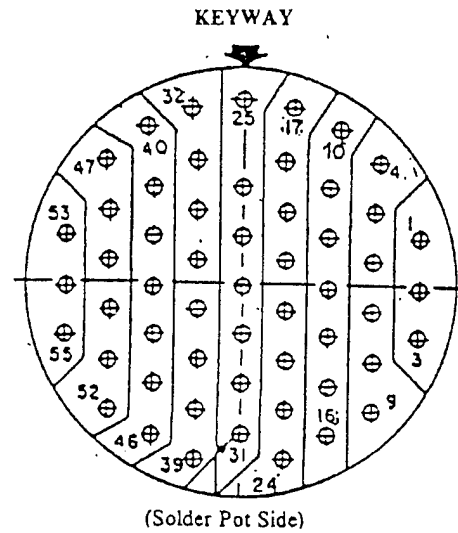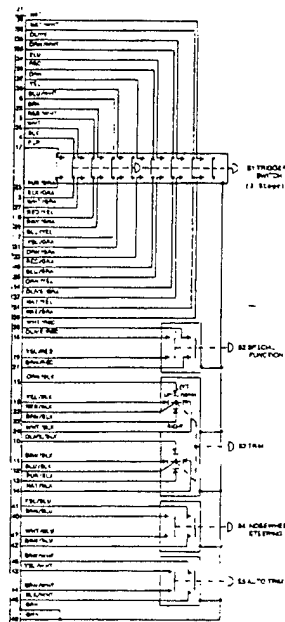
A   ON POSITION #1 SWITCH
B   OFF POSITION #1 SWITCH (PRETRAVEL)
C   MECHANICAL DETENT
D   ON POSITION #2 SWITCH
E   OFF POSITION #2 SWITCH
F   STOP

VIEW A-A

MEASUREMENTS ARE IN INCHES
* See Note after Step 11.